LM748/LM748C Operational Amplifier

General Description

The LM748/LM748C is a general purpose operational amplifier built on a single silicon chip. The resulting close match and tight thermal coupling gives low offsets and temperature drift as well as fast recovery from thermal transients. In addition, the device features:

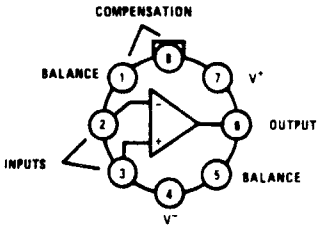
- Frequency compensation with a single 30 pF capacitor
- Operation from ±5V to ±20V
- Low current drain: 1.8 mA at ±20V
- Continuous short-circuit protection
- Operation as a comparator with differential inputs as high as ±30V
- No latch-up when common mode range is exceeded.
- Same pin configuration as the LM101.

The unity-gain compensation specified makes the circuit stable for all feedback configurations, even with capacitive loads. However, it is possible to optimize compensation for best high frequency performance at any gain. As a comparator, the output can be clamped at any desired level to make it compatible with logic circuits.

The LM748 is specified for operation over the −55°C to +125°C military temperature range. The LM748C is specified for operation over the 0°C to +70°C temperature range.

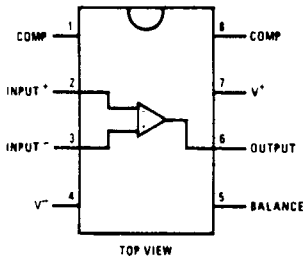
Connection Diagrams

Metal Can Package



Order Number LM748H or LM748CH
See NS Package H08C

Dual-In-Line Package

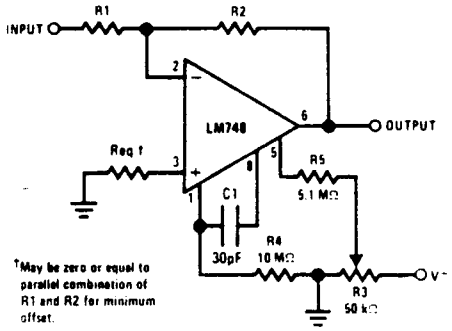


Order Number LM748CN
See NS Package N08B

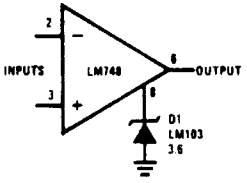
Order Number LM748J or LM748CJ
See NS Package J08A

Typical Applications

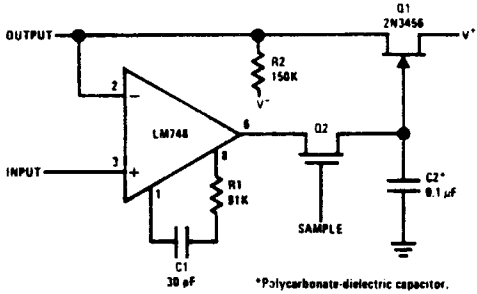
Inverting Amplifier with Balancing Circuit



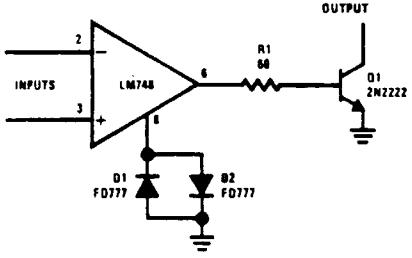
Voltage Comparator for Driving DTL or TTL Integrated Circuits



Low Drift Sample and Hold



Voltage Comparator for Driving RTL Logic or High Current Driver



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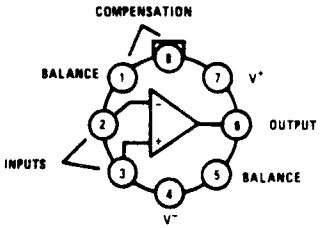

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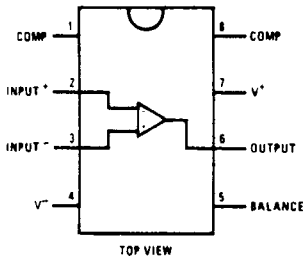

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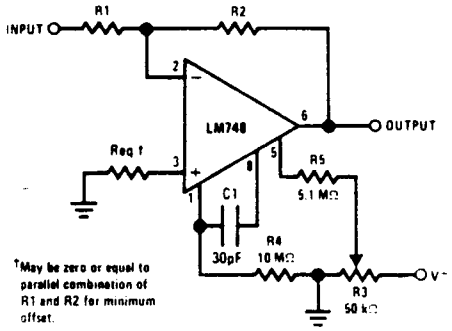
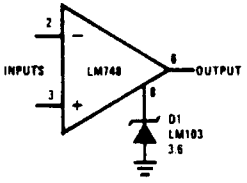
Typical Applications

Inverting Amplifier with Balancing Circuit



Voltage Comparator for Driving DTL or TTL Integrated Circuits



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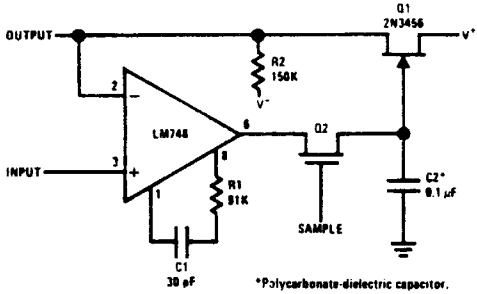

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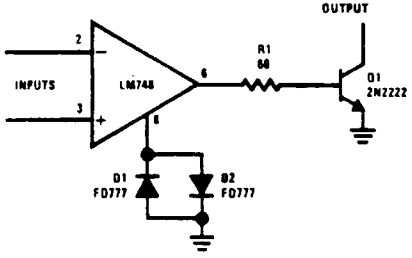
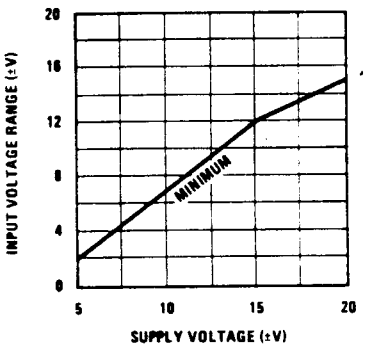
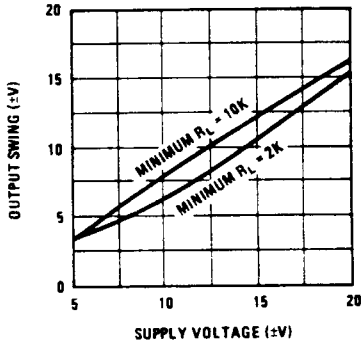


Guaranteed Performance Characteristics (Note 4)

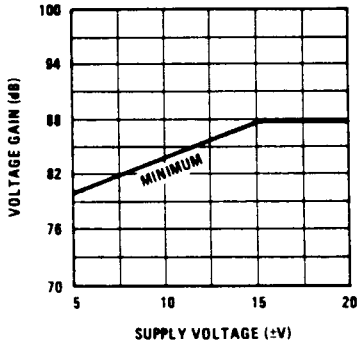
Input Voltage Range



Output Swing

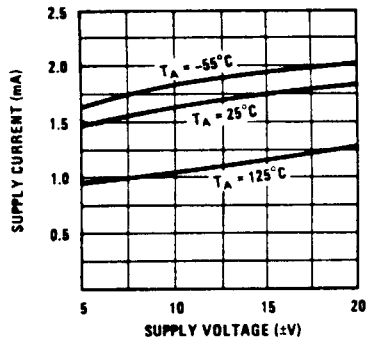


Voltage Gain

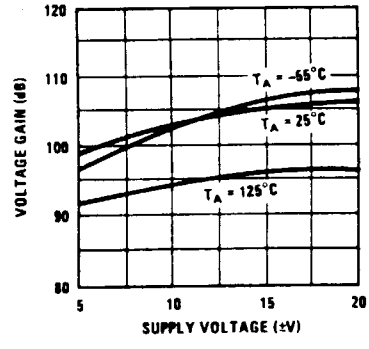


Typical Performance Characteristics

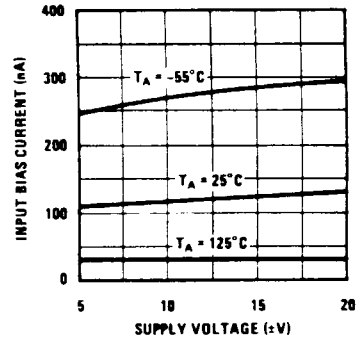
Supply Current



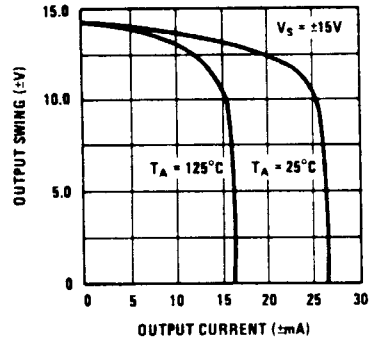
Voltage Gain



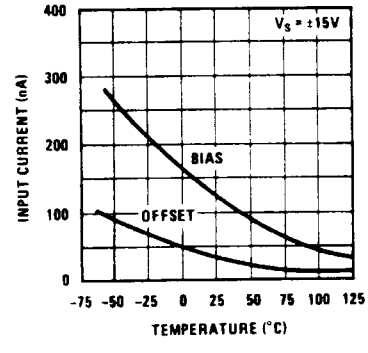
Input Bias Current



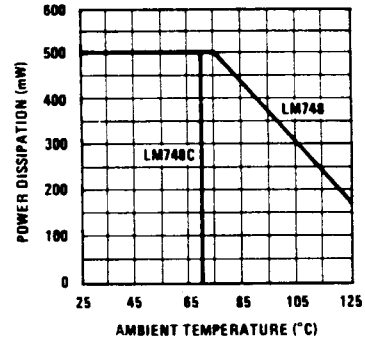
Current Limiting



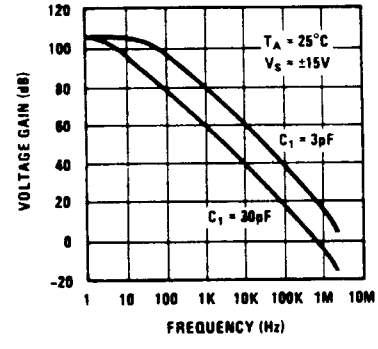
Input Current



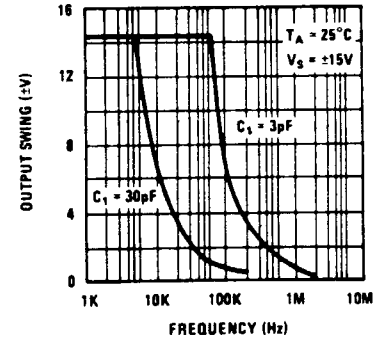
Maximum Power Dissipation



Open Loop
Frequency Response



Large Signal
Frequency Response



Voltage Follower
Pulse Response